	Application No.	Applicant(s)	
Notice of Allowability	10/783,835	PACE ET AL.	
	Examiner	Art Unit	
	Sangwoo Ahn	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *8/23/2005*.

2. ☒ The allowed claim(s) is/are *1-20*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 07192004,05122006

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *0809/2006* .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER

DETAILED ACTION

This communication is in response to the Preliminary Amendment filed on 8/23/2005.

After a thorough examination of the present application and in light of the prior arts, claims 1 – 20 are allowed.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Micah D. Stolowitz on August 9, 2006.

The application has been amended as follows:

Rewrite claim 1 as follows:

"1. A computer-implemented method of reorganizing an ICF catalog comprising a key sequential data set (KSDS) BCS in a VSAM system while the catalog is open, the BCS comprising a data component and an index component, the reorganization method comprising the steps of:

(a) opening the catalog with exclusive control;

(b) creating a backup of the index component;

(c) using a number of sequence set records of the index component, constructing a logical CI correlation table, the table indicating, for each data CI in the data set, a physical location of the CI in the data component and a logical location of the CI in key sequence order;

(d) using the logical CI correlation table, reading data CIs from the data component out to an internal backup data set in potential logical key sequence order so as to form an ordered backup of the data without sorting;

(e) clearing all data CIs in the data component and clearing the index component;

(f) updating BCS VSAM control blocks so as to reflect an empty BCS;

(g) reloading the data set from the ordered backup, sorting records if necessary, and using standard VSAM I/O to reload the data records and reconstruct the index; and

(h) closing the catalog to update VVRs in a VVDS and re-sync the catalog with CAS."

Rewrite claim 2 as follows:

"2. The computer-implemented method according to claim 1 wherein the logical CI correlation table is constructed in random access storage."

Rewrite claim 3 as follows:

"3. The computer-implemented method according to claim 1 wherein the reloading step includes applying the original free space attributes of the BCS."

Rewrite claim 4 as follows:

"4. The computer-implemented method according to claim 1 and further comprising creating an ESTAE environment prior to said creating a backup of the index component, and terminating the ESTAE environment after said reloading step."

Rewrite claim 5 as follows:

"5. The computer-implemented method according to claim 1 and further comprising checking for errors during the reloading step and, if an error is detected, recovering the catalog to its pre-reorganization state."

Rewrite claim 6 as follows:

"6. The computer-implemented method according to claim 5 and wherein said recovering step comprises copying index and data CIs from the internal backup into the BCS physical locations indicated in the internal backup, thereby restoring the index and data component to the pre-reorganization state."

Rewrite claim 7 as follows:

"7. A data structure for storing a correlation between a number of logical keys of a BCS data set and one or more respective physical locations of the data set, for use in reorganizing the BCS while open."

Rewrite claim 8 as follows:

"8. The data structure according to claim 7 wherein the data structure is comprised of a table for storing a correlation between the logical order of the data CIs of a BCS data set and the physical locations of the data CIs, for use in reorganizing the BCS while open."

Rewrite claim 9 as follows:

"9. The data structure according to claim 7 wherein the correlation comprises a correlation between the logical order of the keyed records of a BCS data set and the respective data CIs that contain said keyed records."

Rewrite claim 10 as follows:

"10. A logical CI correlation table for use in re-organizing or restoring an ICF catalog in a VSAM storage environment, the correlation table comprising:

a series of entries, each entry corresponding to a physical CI number in a BCS data component; and each entry including a first pointer to a CI containing lower keys and a second pointer to a CI containing higher keys, so that the table contents together form a logical [key sequential linked] list of the CIs."

Rewrite claim 11 as follows:

"11. A correlation table for use in re-organizing an ICF catalog in a VSAM storage environment, the correlation table comprising:

a series of entries, each entry corresponding to one of the data CIs in the catalog, and wherein each entry in the table comprises a forward pointer to support reading the data records in key sequence."

Rewrite claim 12 as follows:

"12. The correlation table according to claim 11, wherein a predetermined value is used in the table to indicate either end of a chain of key values."

Rewrite claim 13 as follows:

"13. The correlation table according to claim 11, wherein a predetermined pointer value is used in the table to indicate an empty data CI."

Rewrite claim 14 as follows:

"14. The correlation table according to claim 11, wherein a predetermined pointer value is used in the table to indicate an end of a chain of key values."

Rewrite claim 15 as follows:

"15. The correlation table according to claim 11, wherein each entry further includes a backward pointer."

Rewrite claim 16 as follows:

"16. The correlation table according to claim 11, wherein each table entry that does not correspond to a data CI containing the high key includes a forward

pointer identifying the data CI having a next key in a predetermined key

sequence."

Rewrite claim 17 as follows:

"17. A method of stabilizing an ICF catalog in a VSAM system preparatory

to re-organizing the catalog, the method comprising the steps of:

(a) issuing an instruction to obtain a first timestamp;

(b) reading a number of BCS VVR records to obtain the latest BCS refresh

timestamp;

(c) opening the BCS with a standard VSAM OPEN macro;

(d) issuing a RESERVE macro for a SYSIGGV2 resource name, to obtain

exclusive control of the catalog;

(e) obtaining VVRs for the data and index components of the BCS from a

VVDS on a volume where the BCS resides;

(f) comparing the first timestamp to the latest BCS refresh timestamp

stored in the BCS's data component VVR; and

(g) if the latest BCS refresh timestamp is greater, repeating the foregoing

steps (a) through (f), inclusive, until the latest BCS refresh timestamp is equal or

less than the timestamp obtained prior to the latest iteration of the step (c)

opening process."

Rewrite claim 18 as follows:

"18. The computer-implemented method according to claim 1 and further comprising an initial step of stabilizing the catalog."

Rewrite claim 19 as follows:

"19. The computer-implemented method according to claim 18 wherein stabilizing the catalog comprises the steps of:

(a) issuing an instruction to obtain a first timestamp;

(b) reading a number of BCS VVR records to obtain the latest BCS refresh timestamp;

(c) opening the BCS with a standard VSAM OPEN macro;

(d) obtaining VVRs for the data and index components of the BCS from a VVDS on a volume where the BCS resides;

(e) comparing the first timestamp to the latest BCS refresh timestamp stored in the BCS's data component VVR; and

(f) if the latest BCS refresh timestamp is greater, repeating the foregoing steps (a) through (e), inclusive, until the latest BCS refresh timestamp is equal or less than the timestamp obtained prior to the latest iteration of the step (c) opening process."

Rewrite claim 20 as follows:

"20. The computer-implemented method according to claim 1 wherein opening the catalog with exclusive control comprises issuing a RESERVE macro for a SYSIGGV2 resource name."

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

Claim 1 identifies the distinct feature of reorganizing an ICF catalog comprising a key sequential data set (KSDS) BCS in a VSAM system while the catalog is open, the method comprising the steps (a) through (h).

Claim 7 identifies the distinct feature of a data structure for storing a correlation between a number of logical keys of a BCS data set and one or more respective physical locations of the data set.

Claim 10 identifies the distinct feature of a logical CI correlation table comprising a series of entries, each entry comprising pointers to CIs containing keys.

Claim 11 identifies the distinct feature of a correlation table comprising a series of entries, each entry comprising a forward pointer.

Claim 17 identifies the distinct feature of stabilizing an ICF catalog in a VSAM system preparatory to re-organizing the catalog, the method comprising the steps (a) through (g).

The above features in conjunction with all other limitations of the independent and dependent claims 1 – 20 are hereby allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sangwoo Ahn whose telephone number is (571) 272-5626. The examiner can normally be reached on M-F 10-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571) 272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Patent Examiner
AU 2166

8/9/2006 SW

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SUPERVISORY PATENT EXAMINER